

a charge storing means including a plurality of photodetecting elements, each of said photodetecting elements being for storing a charge in accordance with an incident light; and

a charge transfer means for transferring the charge stored in the charge storing means,

wherein a crystal structure of the crystalline semiconductor film is continuous in the crystal growth direction so that the crystal structure is regarded as single crystal for the charge,

wherein a charge transfer direction of the charge transfer means is coincident with the crystal growth direction.

2. (Amended) A semiconductor device comprising:

a plurality of photodiodes being formed in a matrix on an insulating surface;

a plurality of vertical charge coupled devices on the insulating surface, said vertical charge coupled devices being connected with the plurality of photodiodes;

at least a horizontal charge coupled device on the insulating surface, said horizontal charge coupled device being connected with the vertical charge coupled device,

wherein at least one of the vertical and horizontal charge coupled devices comprises a crystalline semiconductor film

having a plurality of crystals extending in a crystal growth direction,

wherein a crystal structure of the crystalline semiconductor film in the crystal growth direction is continuous so that a charge moving is not restricted by a grain boundary,

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Coul* wherein a charge transfer direction of at least one of the vertical and horizontal charge coupled devices is coincident with the crystal growth direction.

3. (Amended) A device according to claim 1,
wherein the crystalline semiconductor film is formed over a quartz substrate, and
wherein the incident light is made from a side of the quartz substrate.

D2 11. (Amended) A device according to claim 2,
wherein the crystalline semiconductor film is formed over a quartz substrate, and
wherein an incident light is made from a side of the quartz substrate.

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E1* 16. (Amended) A semiconductor device comprising:
a crystalline semiconductor film being formed on an insulating surface, said crystalline semiconductor film having a

plurality of crystals extending in a crystal growth direction which is parallel to the insulating surface;

an insulating film on the crystalline semiconductor film;

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a plurality of electrodes being formed on the insulating film, each of said plurality of electrodes being located within a predetermined distance so that a plurality of MOS capacitors are formed between the plurality of electrodes and the crystalline semiconductor film with the insulating film therebetween,

wherein a charge is transferred from one of the MOS capacitors to another of the MOS capacitors in a charge transfer direction,

wherein a crystal structure of the crystalline semiconductor film is continuous so that the crystal structure is regarded as single crystal for the charge,

wherein the charge transfer direction is coincident with said crystal growth direction.

19. (Amended) A semiconductor device comprising:

a photoelectric conversion being formed over an insulating surface;

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a charge coupled device being electrically connected to the photoelectric conversion device and formed over the insulating surface;

said charge coupled device including:

a crystalline semiconductor film being formed on the insulating surface, said crystalline semiconductor film having a plurality of crystals extending in a crystal growth direction which is parallel to the insulating surface;

an insulating film on the crystalline semiconductor film;

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Randy* a plurality of electrodes being formed on the insulating film, each of said plurality of electrodes being located within a predetermined distance so that a plurality of MOS capacitors are formed between the plurality of electrodes and the crystalline semiconductor film with the insulating film therebetween,

wherein a charge is transferred from one of the MOS capacitors to another of the MOS capacitors in a charge transfer direction,

wherein a crystal structure of the crystalline semiconductor film in the crystal growth direction is continuous so that a charge moving is not restricted by a grain boundary,

wherein the charge transfer direction is coincident with the crystal growth direction.
